



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--|-------------|----------------------|---------------------------------|-----------------------------|
| 10/541,155   | 06/30/2005  | Hajime Okutsu        | 273948US0PCT                    | 7811                        |
| 22850  | 7590        | 03/05/2009           |                                 |                             |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | EXAMINER<br>PIERY, MICHAEL T    |                             |
|  |             |                      | ART UNIT<br>1791                | PAPER NUMBER                |
|  |             |                      | NOTIFICATION DATE<br>03/05/2009 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/541,155 | <b>Applicant(s)</b><br>OKUTSU ET AL. |  |
|                              | <b>Examiner</b><br>MICHAEL T. PIERY  | <b>Art Unit</b><br>1791              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-13 is/are rejected.
- 7) ☒ Claim(s) 5-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/30/05, 11/14/05, 4/21/08, 11/26/08</u> .                    | 6) <input type="checkbox"/> Other: _____                          |



## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 5-13 in the reply filed on January 5, 2009 is acknowledged. The traversal is on the ground(s) that the examiner has not provided indication that the claims were read in light of the description when considering the unity of invention. This is not found persuasive because, contrary to applicant's assertion, the examiner considered the claims in light of the description; however, this consideration did not affect the interpretation of the claims. Further, the unity of invention requirement is not met by the two groups due to the lack of a special technical feature, as discussed in the previous office action filed December 5, 2008. Due to the lack of a special technical feature, the groups cannot satisfy the unity of invention requirement under PCT Rule 13.1 because under PCT Rule 13.2 they lack the same or corresponding technical feature.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Objections***

2. Claims 5-13 are objected to for being dependent on non-elected claims that have been withdrawn. Applicant is advised to move the limitations present in the claims depended on into the current dependent claims. For the purposes of examination, the limitations have been incorporated.

### ***Claim Rejections - 35 USC § 103***

Art Unit: 1791

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 5, 7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ida (US 4,839,125).

Regarding claim 5, Ida teaches producing a plate polymer from a polymerizable material containing methyl methacrylate (column 2, lines 15-17), using an apparatus having two endless belts, continuous gaskets, a heating zone for solidifying the

Art Unit: 1791

polymerizable material with a D/X ratio between 0.30 and 0.99 (column 6, lines 21-45).

Ida teaches the rollers are spaced by 200 mm and the diameters are 90 mm so the distance between the axes (X) is either 200 or 290 (2 radii plus the distance between), either of which place D/X in the claimed range. Ida teaches the width of the belt is 800 mm and the diameter of the rolls is 90 mm (column 6, lines 22 and 32). The examiner interprets the width of the roll body portion is not substantially greater than the width of the belt, therefore the D/Z ratio is greater than 0.04. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the desired width of the roll body portion because the roll body width needs to be optimized to be at least as wide as the belt but not too wide to incur unnecessary material costs. It has been held that optimization of a working variable is within routine skill of one in the art.

Regarding claim 7, Ida teaches the employing gaskets at both sides of the endless belt to regulate the spreading of the raw material (column 5, lines 13-16). Ida teaches the gaskets are on the belt and the belt is 800 mm in width (column 6, line 22), therefore the gaskets regulate the thickness variation of the material to less than 1 meter.

Regarding claim 9, the examiner interprets Ida teaches the maximum value of temperature rising is 60°C/min or less. Ida teaches passing the material through a hot water spray district and an infrared heater district at 120°C (column 6, lines 35-45). This process is consistent with applicant's disclosed method of regulating the temperature rising. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the ideal rate of temperature rising since it has been held that determining the optimum value of a result effective variable is within routine

Art Unit: 1791

skill of one in the art. The rate of temperature rising is a result effective variable because it affects the final properties of the plate such as thermal deformation and optical strain.

Regarding claim 10, Ida teaches passing the belts into a space at a temperature of 50-100°C (column 6, lines 35-40). Ida does not explicitly teach the relative humidity is at least 50%. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Ida to maintain the relative humidity at 50% since it has been held that optimizing a result effective variable is within ordinary skill of one in the art. Relative humidity is a result effective variable because it affects properties such as the rate of temperature rising.

Regarding claim 11, Ida teaches using gaskets to seal the sides of the material (column 5, lines 13-16). Ida does not explicitly teach the compression strength or thickness. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the ideal compression strength and thickness because both properties directly affect the final dimensions of the plate.

5. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ida as applied to claim 5 above, and further in view of Nishi (JP 06-278148 - citations refer to attached machine translation).

Ida teaches the method of claim 5, as applied above.

Regarding claims 6 and 8, Ida does not explicitly teach a laser beam emitter the sides of the belt and reflecting the laser to regulate the variation width. However, Nishi teaches monitoring and regulating dimensions in a plate/board production process using a laser emitting device (paragraph 0020). It would have been obvious to one of ordinary

Art Unit: 1791

skill in the art at the time of the invention to modify the process of Ida to include a laser monitoring device because the device provides automated adjustments to the process based on detected variations from ideal dimensions (paragraph 0020).

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ida as applied to claim 5 above, and further in view of Kato et al. (US 3,988,098).

Ida teaches the method of claim 5, as applied above.

Regarding claim 12, Ida teaches using gaskets, but does not explicitly teach blowing air into the gaskets to regulate the pressure. However, Kato teaches it is known to blowing fluids into a gasket to regulate the pressure (column 3, lines 13-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Ida to include fluid pressurized gaskets because the pressurized gaskets prevent polymer leakage (column 3, lines 5-10).

Regarding claim 13, Ida does not explicitly teach the pressure in the gasket. However, Kato teaches the pressure is 50 mm water or less (column 3, lines 15-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Ida to include fluid pressurized gaskets at 50 mm water because the pressurized gaskets prevent polymer leakage (column 3, lines 5-10).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. PIERY whose telephone number is (571)270-5047. The examiner can normally be reached on M-Th 7:30-6.



Art Unit: 1791

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael T Piery/  
Examiner, Art Unit 1791

/Monica A Huson/

Primary Examiner, Art Unit 1791